

## **WHAT IS CLAIMED IS:**

1. A method for resynchronization of a heart comprising the steps of:
  - (a) coupling a linear source to a cardiac rhythm management device via a lead;
  - (b) coupling the linear source to a surface of the heart; and
  - (c) resynchronizing a contraction of the heart through linear excitation of the surface by the linear source.
2. The method of claim 1, wherein the coupling step (b) further comprises selecting a portion of left ventricular epicardium as the surface of the heart.
3. The method of claim 1, wherein the coupling step (b) further comprises selecting a portion of left ventricular free wall as the surface of the heart.
4. The method of claim 1, further comprising the steps of:
  - (d) coupling a second linear source to the cardiac rhythm management device via a second lead; and
  - (e) coupling the second linear source to a surface of a right ventricle of the heart.
5. The method of claim 1, further comprising the steps of:
  - (d) coupling a second source to the cardiac rhythm management device via a second lead; and
  - (e) coupling the second source to a surface of an atrium of the heart.

6. A method of resynchronization of a heart comprising the steps of:
  - (a) coupling a first linear source to a left ventricular free wall nearer an apex of the heart; and
  - (b) sending a first electrical stimulus to the first linear source.
7. The method of claim 6, further comprising the steps of:
  - (c) coupling a second linear source to the left ventricular free wall nearer a base of the heart; and
  - (d) sending a second electrical stimulus to the second linear source.
8. The method of claim 7, wherein the sending step (d) further comprises pausing for a delay before sending the second electrical stimulus.
9. The method of claim 8, wherein the sending step (d) further comprises calculating the delay such that the heart is stimulated so as to approximate normal apex-to-base contraction.

10. An apparatus to resynchronize a heart using atrial synchronous ventricular pacing, the apparatus comprising:

a cardiac rhythm management device;

a linear source coupled to a portion of a ventricular myocardium surface of the heart; and

a lead coupled at a first lead end to the cardiac rhythm management device and at a second lead end to the linear source.

11. The apparatus of claim 10, wherein the linear source is positioned to linearly excite a region of the ventricular epicardial surface of the heart.

12. The apparatus of claim 10, further comprising a second linear source, wherein the second linear source is coupled to the cardiac rhythm management device via a second lead and the second linear source is further coupled to a surface of a right ventricle of the heart.

13. The apparatus of claim 10, further comprising a second source, wherein the second source is coupled to the cardiac rhythm management device via a second lead and the second source is further disposed within a great vein of the heart so as to be electrically coupled to a left atrium of the heart.

14. The apparatus of claim 10, wherein the linear source comprises a single, elongated electrode.

15. The apparatus of claim 14, wherein the linear source is greater than 2 cm in length.

16. The apparatus of claim 14, wherein the linear source is less than 6 cm in length.

17. The apparatus of claim 10, wherein the linear source comprises a plurality of closely-spaced electrodes.
18. The apparatus of claim 17, wherein the plurality of close-spaced electrodes are stimulated at approximately the same instant.
19. The apparatus of claim 17, wherein one or more of the plurality of close-spaced electrodes are stimulated at different instances.
20. The apparatus of claim 10, further comprising:
- a second linear source coupled to a surface of the heart; and
  - a second lead coupled to the cardiac rhythm management device at a first end and to the second linear source at a second end.
21. The apparatus of claim 20, wherein the cardiac rhythm management device sends a first electrical stimulus to the linear source and a second electrical stimulus to the second linear source.
22. The apparatus of claim 21, wherein the cardiac rhythm management device further creates a delay between sending the first electrical stimulus and sending the second electrical stimulus.

23. An apparatus to resynchronize a heart, the apparatus comprising:
- first means for providing an electrical stimulus to stimulate the heart;
  - second means for exciting a linear region of a surface of the left ventricle; and
  - means for electrically coupling the first means to the second means.

24. An apparatus to resynchronize contraction of a left ventricular free wall of a heart using atrial synchronous ventricular pacing, the apparatus comprising:

- a cardiac rhythm management device for creating an electrical stimulus;
- a lead coupled to the cardiac rhythm management device at a first lead end; and
- a linear source coupled to the lead at a second lead end, the linear source comprising a contact surface coupled to the left ventricular free wall at a free wall region, wherein the contact surface spans in a linear direction and wherein the contact surface transmits the electrical stimulus so as to linearly excite the free wall region along the entire contact surface and thereby promote resynchronization of contraction of the left ventricular free wall.

25. The apparatus of claim 24, wherein a length of the linear source is between 2 cm and 5 cm.